

A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION



National Bureau of Standards
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MAR 20 1970

NBS TECHNICAL NOTE 498

Bibliographies on Fabric Flammability

U.S.
DEPARTMENT
OF
COMMERCE
National
Bureau of
Standards

- Wearing Apparel
- Fabrics Used on Beds
- Carpets and Rugs

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TECHNICAL NOTE 498

ISSUED FEBRUARY 1970

Nat. Bur. Stand. (U.S.), Tech. Note 498, 36 pages (Feb. 1970)
CODEN: NBTNA

Bibliographies on Fabric Flammability

- Part 1. Wearing Apparel
- Part 2. Fabrics Used on Beds
- Part 3. Carpets and Rugs

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Abstract

As recognition of the urgency of the flammable fabrics problem, the Flammable Fabrics Act of 1953 was amended in 1967 to include all items of wearing apparel and interior furnishings. In order to facilitate research and assist in the development of new standards and test methods in these areas, a series of bibliographies is being prepared by the NBS Office of Flammable Fabrics. The first three, on wearing apparel, bed fabrics and carpets and rugs, are included in this Technical Note.

Key words: Apparel; bedding; beds; blankets; carpets; clothing; fabrics; fibers; fire; flame; flammability; flammable; floor coverings; mattresses; pillow cases; pillows; rugs; sheets; springs; wearing apparel.

Fabric Flammability Bibliographies

Preface

The Secretary of Commerce, under the 1967 Amendment to the Flammable Fabrics Act, was authorized to conduct research on the flammability of products, fabrics and materials, conduct feasibility studies on reduction of flammability, develop flammability test methods and offer appropriate training in the use of flammability test methods. These responsibilities were delegated to the National Bureau of Standards.

In order to facilitate these four areas of investigation, it is necessary to have a thorough knowledge of what has been accomplished and what is being done by others in the field. Therefore, as part of the program of the Office of Flammable Fabrics, a series of bibliographies is being developed in cooperation with the staff of the Library of the National Bureau of Standards.

Each bibliography deals with a specific facet of the fabric flammability problem, such as flammability of wearing apparel, flammability of carpets and rugs, smoke and noxious products of combustion, etc. These bibliographies are working documents and will be updated and reissued as warranted. All of the items listed will be on file at the National Bureau of Standards and available for inspection by those interested. However, copyright restrictions prevent the distribution of copies of these documents.

Citations for these bibliographies have been collected through a review of abstracting and indexing journals, such as *Chemical Abstracts*, *Applied Science and Technology Index*, *Engineering Index*, and *Business Periodicals Index* for the period 1960 through May 1969, as well as from various footnotes and bibliographies. The elements of each citation will vary with the type of publication cited. Initially, they will include: author or issuing agency; title of article or paper; title of journal; title of book, chapter and chapter number; volume number, issue number; edition other than first; publisher, place and date of publication, inclusive pages; and number of references given. Later versions will include abstracts.

Arrangement is alphabetical by surname of the first author or by title if there is no author. When readily available the AD, PB, NSA or STAR numbers are supplied. Author and subject indices are provided.

The following symbols signify certain types of citations:

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- **—a short item such as a news note, or subsection of an article.
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The literature on the flammability of fabrics is highly fragmented and difficult to cover completely. Consequently, some items in the literature may have been omitted, and, it would be greatly appreciated if those using the bibliographies would inform the Office of Flammable Fabrics, National Bureau of Standards, Washington, D.C. 20234 of any items of which they have knowledge that are not included.

The first three bibliographies are being published together under one cover in this Technical Note.

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Part 1. Wearing Apparel

Introduction

Available statistics indicate that many deaths or injuries result from wearing apparel fires every year. Large numbers of publications reflect the general concern with this problem. This concern with clothing fires is not a recent development. Studies of fire retardants for fabrics have been recorded as early as the seventeenth century; an article in the *Scientific American* in July 1861, on the occasion of the tragic fire death of Mrs. Henry Wadsworth Longfellow, urged more attention to the flameproofing of ladies' garments.

This bibliography contains over 180 citations to the literature on flammability of wearing apparel. Only those references related specifically to wearing apparel are included. General treatments on test methods, legislation and retardant treatments will be presented in separate bibliographies.

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Part 2. Fabrics Used on Beds

Introduction

Fabrics used in or on beds are involved in numerous fires resulting in many deaths or serious injuries to humans annually. These fires frequently are started by small ignition sources and are characterized by long periods of smoldering. Often the victims have been found anesthetized by the toxic products of this smoldering combustion either with or without burn injuries. In the extreme cases, the combustion products have produced fatalities. In other instances rapidly burning fires have been encountered.

Part 2 contains over 75 citations related to fabric products used in and on beds. These range from mattresses and springs to bedspreads and blankets. The citations are directly related to these finished products; they do not include general references to the materials from which they were made, the combustion products or to general methods of test. These items will be covered in later bibliographies directed specifically to them.

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Part 3. Carpets and Rugs

Introduction

In recent years carpets and rugs have become progressively more important as floor coverings in homes and places of gathering and public accommodation. More and more frequently entire floor and stair areas have been covered. Psychophysicists and acoustic engineers are currently recommending carpets for use on walls and ceilings to control sound levels. New fibers and construction techniques have been introduced fairly regularly. As the uses of carpets and rugs increase, their potential involvement in fires also increases. Both consumer and manufacturing interests are keenly aware of the potential hazards that are being imposed by these broader uses of carpets and by the proliferation of new fibers and techniques used in their construction.

Part 3 has been prepared to meet this rapidly increasing interest in flammability of rugs and carpets. It contains approximately 65 citations directly related to this category. General references on test methods, retardant treatments or products of combustion will be covered in other bibliographies of this series.

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